

## DEPARTMENT OF THE INTERIOR

## Fish and Wildlife Service

## 50 CFR Part 17

RIN 1018-AB23

**Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Endangered Mount Graham Red Squirrel (*Tamiasciurus hudsonicus grahamensis*)****AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Final rule.

**SUMMARY:** The Service is designating critical habitat for the Mount Graham red squirrel (*Tamiasciurus hudsonicus grahamensis*) under the authority contained in the Endangered Species Act of 1973, as amended. The Mount Graham red squirrel was listed as an endangered species under the Act on June 3, 1987; however, final designation of the proposed critical habitat was postponed at that time in accordance with section 4(b)(6)(C) of the Act. Critical habitat is now being designated in portions of the Coronado National Forest in Graham county, Arizona. Federal actions that may affect the areas designated as critical habitat are now subject to consultation with the Service, pursuant to section 7(a)(2) of the Act.

**EFFECTIVE DATE:** February 5, 1990.

**ADDRESSES:** The complete file for this rule is available for inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service Ecological Services Office, 3616 W. Thomas Rd., Suite #6, Phoenix, Arizona 85019.

**FOR FURTHER INFORMATION CONTACT:** Lesley Fitzpatrick, Endangered Species Biologist, (see **ADDRESSES** above) (602/261-4720 or FTS 261-4720).

**SUPPLEMENTARY INFORMATION:****Background**

The Mount Graham red squirrel is a small grayish brown arboreal species, tinged rusty or yellowish along the back. In summer, a dark lateral line separates the light colored underparts from the

grayer or browner sides (Spicer et al. 1985).

The Mount Graham red squirrel's range lies entirely within the Safford Ranger District of the Coronado National Forest. This squirrel is now found at highest densities in Engelmann spruce (*Picea engelmannii*) and/or fir, especially corkbark fir (*Abies lasiocarpa* var. *arizonica*). In 1986, forty-eight percent of the active middens were above 10,200 feet (3109 m) in mature Engelmann spruce/corkbark fir (Warshall, Office of Arid Land Studies, pers. comm., 1986). Lower densities have been found in old growth Douglas fir (*Pseudotsuga menziesii*) and/or white fir (*Abies concolor*), often associated with Englemann spruce. Its diet consists largely of conifer seeds, and during the winter it depends on seed-bearing cones that it has stored at sites known as middens. The condition of midden sites is important and must remain cool and moist to preserve the cones and to prevent them from opening and losing their seeds. These caches, usually associated with logs, snags, stumps, or a large live tree, are the focal points of individual territories, and the number of midden complexes offers an approximation of the number of resident red squirrels in a particular area. In a 1986 midden census, the density of squirrels in excellent habitat was 15 per 100 acres (40.5 hectares), which is in the low end of the range for red squirrel densities in North America (Smith et al. 1988).

The Mount Graham red squirrel was described by Allen in 1894, based on three specimens taken that same year on Mount Graham in the Pinalenos. Subsequent reports indicate that the subspecies was common around the turn of the century, but was declining by the 1920's and rare by the 1950's (Hoffmeister 1956). This situation apparently was associated with loss and disruption of forest habitat, and perhaps with competition from an introduced population of the tassel-eared, or Abert's, squirrel (*Sciurus aberti*). From 1963 to 1967, Minckley (1968) was unable to find the Mount Graham red squirrel and was concerned that the subspecies had become extinct. Later, however, the continued existence of the Mount Graham red squirrel was verified. A Service-funded status survey in 1984-1985 located this mammal or its fresh sign at 16 localities in the Pinalenos and estimated the number of squirrels as 300-500 animals (Spicer et al. 1985). More recent midden surveys indicate that this estimate was too high. Based on a midden census in the spring of 1986, there were an estimated 328 red squirrels. This number dropped 25

percent by the fall of 1987, when 246 squirrels were estimated (Smith et al. 1988), and in the spring of 1988 was estimated at about 200. The spring of 1989 survey yielded a population estimate of 99-150 (L. Fitzpatrick, U.S. Fish and Wildlife Service, pers. comm., 1989). The June 1989 survey yielded a population estimate of 116-167 (K. Milne, pers. comm., 1989).

In both its original Review of Vertebrate Wildlife, published in the *Federal Register* on December 30, 1982 (47 FR 58454-58460), and the revised version, published on September 18, 1985 (50 FR 37948-37967), the Service included the Mount Graham red squirrel in category 2, meaning that information then available indicated that a proposal to determine endangered or threatened status was possibly appropriate but was not yet sufficiently substantial to biologically support such a proposal. The status survey and more recent surveys by the U.S. Forest Service (USFS), Arizona Game and Fish Department (AGFD), and the University of Arizona (U of A) have since become available and provide a substantial basis for determination of endangered status. Although the squirrel does still survive, its range and numbers have been reduced, and its habitat is threatened by a number of factors, including proposed construction of an astrophysical observatory. The Service published a proposed rule to list this subspecies as endangered on May 21, 1986 (51 FR 18630-18634). The rule designating this squirrel as endangered was published on June 3, 1987 (52 FR 20994). In accordance with section 4(b)(6)(C) of the Act, the proposed critical habitat designation was not made final at the time of listing, but was postponed for an additional year to allow for gathering and analyzing of economic data.

**Summary of Comments and Recommendations**

In the May 21, 1986, proposed rule and associated notifications, all interested parties were asked to submit factual reports or information that might contribute to the development of a final rule. The original comment period closed on July 21, 1986, but was reopened on August 26, 1986 (51 FR 27429), to accommodate two public hearings and remained open until November 21, 1986. Appropriate State agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. A newspaper notice, inviting general public comment, was published in the

*Eastern Arizona Courier* on June 18, 1986.

Requests for a public hearing were received, and public hearings were held in Tucson and Thatcher, Arizona, on August 26 and 27, 1986, respectively. Interested parties were contacted and notified of those hearings, and notices of the hearings were published in the *Federal Register* on July 31, 1986 (51 FR 27429); the *Arizona Daily Star* on August 11, 1986; and the *Eastern Arizona Courier* on August 13, 1986. About 320 people attended the hearings. Comments on the proposed rule, including critical habitat, were received in the hearings and are also summarized below.

A total of 135 comments on the proposed rule were received; 64 supported the proposal; 29 questioned or opposed the proposal; and 42 either commented on information in the proposal but expressed neither support nor opposition, were non-substantive or irrelevant to the proposal, or contained only economic information related to critical habitat designation.

Oral or written statements were received from 94 entities at the hearings; 21 supported the proposal, 13 questioned or opposed the proposal, and 60 neither supported nor opposed, were non-substantive or irrelevant to the proposal, or contained only economic information related to critical habitat designation.

All letters and written or oral statements received during the comment period and public hearings are combined in the following discussion. Relevant economic information supplied in these comments was incorporated into the Economic Analysis on proposed critical habitat. That analysis is available upon request as are copies of all letters received and of the hearing transcripts (see ADDRESSES).

Comments of support were received from the U.S. Forest Service, Arizona Game and Fish Department, State of Arizona, Office of Arid Land Studies (U of A), Defenders of Wildlife, Arizona Chapter of The Wildlife Society, Mount Graham Conservation Project, Coalition for the Preservation of Mount Graham, Earth First!, Tucson Audubon Society, Grand Canyon Chapter of the Sierra Club, Flagstaff Archers, Cochise Conservation Council, Arizona Flycaster's Club, Huachuca Audubon Society, Arizona Wildlife Federation, Arizona Nature Conservancy, Tucson Rod and Gun Club, Animal Defense Council, Southern Arizona Hiking Club, Southern Arizona Roadrunners Club, a member of the Pima County Board of Supervisors, and 54 private individuals.

Comments questioning or in opposition to the proposal were received

from two State legislators, Picture Rocks Observatory, two employees of Steward Observatory, the Vice-President of Research and the President of the University of Arizona (U of A), a member of Citizens for Science, a member of the Gila Valley Economic Development Foundation, the Mayor of Safford, and 24 private individuals.

Comments that expressed neither support nor opposition were non-substantive, irrelevant to the proposal, or contained only economic information related to critical habitat designation were received from the Arizona Board of Regents, two faculty members from the Department of Ecology and Evolutionary Biology at the U of A, four employees of Steward Observatory (including the Director), a research specialist with the U of A's College of Business, the Director of the Drachman Institute for Land and Regional Development Studies at the U of A, a member of the Physics Department at Arizona State University, a member of Graham County's Board of Supervisors, a representative for Representative Jim Colbe, a representative for Senator DeConcini, a State legislator, three members of Citizens for Science, a councilman for the City of Safford, Lowell Observatory, a member of the Gila Valley Economic Development Foundation, and 59 individuals.

Summaries of substantive comments addressing the designation of critical habitat for the Mount Graham red squirrel are covered in the following discussion. Comments of similar content are placed in a number of general groups. These comments and the Service's responses are given below:

**Issue 1:** Several commenters suggested that the proposed critical habitat be enlarged to include some occupied areas that are outside of the proposed critical habitat and some unoccupied areas that may be important in the recovery of the species. Others asked why areas at lower elevations where red squirrels have been previously observed and where they appear to have survived their most vulnerable period in history are not included in critical habitat. In addition, the University of Arizona has asked that we "delay the designation of critical habitat for a limited period of time to allow the development of an HCP [Habitat Conservation Plan] for the species, and to allow a more precise delineation of the boundaries of the critical habitat." The University of Arizona further stated that "the designation of critical habitat at this time is neither 'prudent' nor 'determinable'."

**Service response:** The Service believes that the designation of critical habitat is both prudent and determinable. The best data currently available to the Service support the importance of the proposed critical habitat area for the survival of the Mount Graham red squirrel, and we believe this area warrants designation as critical habitat. The area at the higher elevations appears to be the most important to this squirrel and contains the highest density of squirrel middens. In 1986, about 48 percent of all active middens were above 10,200 feet; and the proposed critical habitat contained about 70 percent of all known squirrel middens (Warshall, OALS, *in litt.*, 1986). The Endangered Species Act provides that additional critical habitat can be proposed in the future if warranted.

CPR HCP's were discussed under the Service's response to issue 1 in the final listing of the species (52 FR 20994, June 3, 1987). Under circumstances where the entire range of the listed species is contained within the jurisdiction of one land manager, however, HCP's are of little practical value. In this instance the entire range of the red squirrel is within Coronado National Forest. The Forest Management Plan serves the same function that an HCP would serve.

**Issue 2:** University of Arizona requested that the potential astrophysical sites be excluded from critical habitat designation because "the designation of critical habitat in this area could significantly disrupt the establishment of any astrophysical facilities on the Mountain."

**Service response:** Section 4(b)(2) of the Endangered Species Act states:

The Secretary may exclude any area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific and commercial data available, that the failure to designate such area as critical habitat will result in the extinction of the species concerned.

The Service does not believe that potential astrophysical sites should be excluded from critical habitat designation. Elimination of sites from critical habitat that may never be used for telescopes would be unsupportable either economically or biologically. In light of the Service's biological opinion, issued July 14, 1988, that the development of three telescopes on Emerald Peak is not likely to jeopardize the continued existence of the Mt. Graham red squirrel or to result in the destruction or adverse modification of the proposed critical habitat under the provisions of Reasonable and Prudent

Alternative 3, no disruption to the construction or operation of the three telescopes is expected. Therefore, the benefits of retaining these areas in the critical habitat outweigh the benefits of excluding them.

**Issue 3:** The economic effect of critical habitat designation should be based primarily on values as they currently exist and not on proposed values.

**Service response:** In our Economic Analysis the Service is supposed to consider *reasonably* foreseeable (authorized, permitted, funded) impacts of those activities that may affect or be affected by the critical habitat designation.

#### Critical Habitat

Critical habitat, as defined by section 3 of the Act, means: (i) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection, and (ii) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Section 4(a)(3) of the Act requires that critical habitat be designated to the maximum extent prudent and determinable concurrently with the determination that a species is endangered or threatened. Section 4(b)(6) requires that a proposed listing be made final within 1 year from the publication of the proposed rule, but provides for an additional 1-year extension for the final designation of critical habitat, if necessary. Critical habitat is being designated for the Mount Graham red squirrel to include three areas in the Coronado National Forest, Graham County, Arizona. These areas are precisely delineated below in the "Regulations Promulgation" section. The names applied to the areas—Hawk Peak/Mount Graham, Heliograph Peak, and Webb Peak—refer to prominent mountains. The areas have irregular shapes, but cover a total of about 2,000 acres (800 hectares).

The three designated areas contain major concentrations of the Mount Graham red squirrel, and the habitat necessary to its survival, including cover, food sources, nest sites, and midden sites. The winter survival of the red squirrel depends primarily on the availability of seeds of cones stored in middens. Therefore, an environment in which the midden-cached cones will stay cool and moist, and be prevented

from opening and losing their seeds, is of critical importance. Such an environment is most often found in dense, shady forest above 10,000 feet (3,048 meters) and at lower elevations on north-facing slopes or in protected pockets and small basins (Spicer et al. 1985).

Section 4(b)(8) requires, for any proposed or final regulation that designates critical habitat, a brief description and evaluation of those activities (public or private) that may adversely modify such habitat or may be affected by such designation. As the Mount Graham red squirrel requires dense spruce-fir forest, it would suffer through activities that destroy such habitat or substantially reduce forest density. Potential activities that could adversely affect the habitat include timber harvesting and recreational development that proceed without adequate consideration of the welfare of the squirrel, and construction of the proposed astrophysical facility in the Graham Mountains. Any such activities that take place on national forests would require authorization by the U.S. Forest Service. Because all of the critical habitat of the Mount Graham red squirrel is within a national forest, the activities in question could require appropriate Forest Service conferral and/or consultation as described below under "Available Conservation Measures."

Section 4(b)(2) of the Act requires the Service to consider economic and other impacts of designating a particular area as critical habitat. The Service has considered the critical habitat designation in light of all additional relevant information obtained during the public comment period and public hearings. An Economic Analysis and Determination of Effects of the critical habitat designation have been prepared and are available upon request. Adjustment of the critical habitat delineation is not warranted based on the economic and other impacts brought forward between the proposed and final rules. Conclusions of the economic documents are summarized in the "Regulatory Flexibility Act and Executive Order 12291" section of this rule.

The 24 acres of the 150-acre Mt. Graham International Observatory Site that may be developed for astrophysical purposes lie in an area of red squirrel concentration composed largely of excellent habitat. Many activities inside the 24 acres can affect the larger area around it. Thus, removal of the 24-acre site from critical habitat would not have relieved the Forest Service from the need to consult on the astrophysical

development, independent of any economic benefit applicable to critical habitat boundaries. Excluding the entire 150-acre site would not solve any issue and creates a new concern. A large exclusion area on Emerald Peak would eliminate important protection for the habitat supporting the red squirrel concentration. Excellent habitat is in short supply for this species, totalling only four percent of the total habitat. The reduction in protection of the larger Emerald Peak area by excluding it from critical habitat would render the population of red squirrels more vulnerable, and at June 1989 estimated population levels (116-167 individuals), no reduction in the protection for important habitats can be supported biologically. Therefore, the Service has determined that the potential benefits of excluding the astrophysical site from critical habitat designation do not warrant excluding that area from critical habitat.

#### Available Conservation Measures

Section 7(a)(2) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is listed as endangered or threatened and with respect to the habitat that has been designated as critical. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Because the Mount Graham red squirrel occurs in highest densities in dense spruce-fir forest, it would suffer through activities that destroy such habitat or substantially reduce forest density. Potential activities that could adversely affect the habitat include timber harvesting and recreational development that proceed without adequate consideration of the welfare of the squirrel, and construction of the proposed astrophysical facility in the Graham Mountains. Any such activities that take place on national forests would require authorization by the U.S. Forest Service. Because the entire range of the Mount Graham red squirrel is within a national forest, the activities in question that are not otherwise covered in the permit issued by the Forest Service to the University of Arizona (April 7, 1989) for construction of three

telescopes and related activities could require appropriate Forest Service conferral and/or consultation as described above.

Formal consultation on the proposed astrophysical development and Forest Plan was initiated on February 17, 1988, and was completed on July 14, 1988.

The endangered status of the Mount Graham red squirrel, under provisions of section 4(a)(1) of the Endangered Species Act of 1973, as amended, is not affected by this designation of its critical habitat.

#### National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

#### Regulatory Flexibility Act and Executive Order 12291

The Department of the Interior has determined that designation of critical habitat for this species will not constitute a major action under Executive Order 12291 and certifies that this designation will not have a significant economic effect on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). This rule contains no information collection or record keeping requirements, as defined under the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et seq.*)

The added cost (if any) to the Forest Service cannot be determined. Estimated non-Federal costs that could possibly have resulted if the critical habitat designation had precluded astrophysical development in the Graham Mountains were the preclusion of a potential 2.5 percent increase in employment in Graham Co., AZ, and a potential 0.5 percent (or less) increase in Pima Co., AZ. However, establishment of the Mt. Graham Observatory was granted by law. Thus, the economic

restrictions possible under the designation of critical habitat become less because almost half the facility will be constructed in any case.

In summary, adjustment of the critical habitat delineation is not warranted based on the economic and other impacts. No direct costs, enforcement costs, or information collection or recordkeeping requirements will be imposed on small entities by the designation. These determinations are based on a Determination of Effects that is available at the Phoenix Ecological Services Field Office (see ADDRESSES).

#### References Cited

- Allan, J.A. 1894. Descriptions of ten new North American mammals, and remarks on others. *Bull. Amer. Mus. Nat. Hist.* 6:320-321.
- Hoffmeister, D.F. 1956. Mammals of the Graham (Pinaleno) Mountains, Arizona. *Amer. Midl. Nat.* 55(2):257-288.
- Minckley, W.L. 1968. Possible extirpation of the spruce squirrel from the Pinaleno (Graham) Mountains, south-central Arizona. *J. Arizona Acad. Sci.* 5:110.
- Smith, R.A., B. Spicer, P. Warshall, R. Wadleigh. 1988. Mount Graham red squirrel. An expanded biological assessment of impacts: Coronado National Forest Land Management Plan and University of Arizona Proposal for Mt. Graham Astrophysical Development. 130 pp.
- Spicer, R.B., J.C. deVos, Jr., R.L. Glinski. 1985. Status of the Mount Graham red squirrel, *Tamiasciurus hudsonicus grahamensis* (Allen), of southeastern Arizona. Report to U.S. Fish and Wildlife Service, Office of Endangered Species, Albuquerque, New Mexico. 48 pp.

#### Authors

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#### List of Subjects in 50 CFR Part 17

Endangered and threatened species, Fish, Marine mammals, Plants (agriculture).

#### Regulations Promulgation

#### PART 17—[AMENDED]

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, is amended as set forth below:

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1543; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500, unless otherwise noted.

2. Amend § 17.95(a), by adding critical habitat of the Mount Graham red squirrel in the same alphabetical order as the species occurs in 17.11(h).

#### § 17.95 Critical habitat—fish and wildlife.

(a) \* \* \*

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#### Mount Graham Red Squirrel (*Tamiasciurus hudsonicus grahamensis*)

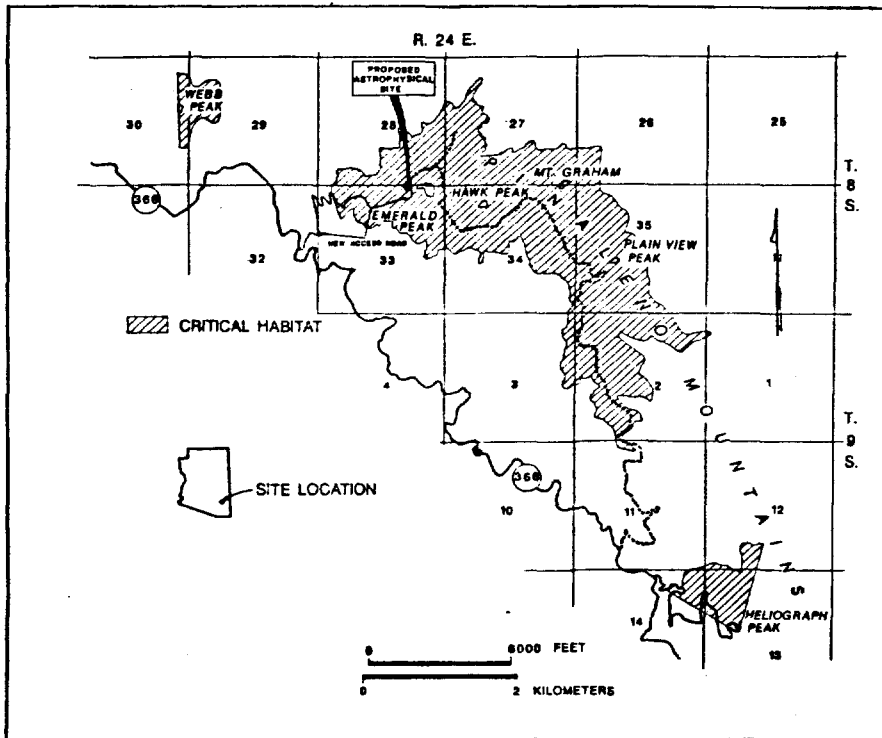
Arizona. Areas of land, water, and airspace in the Coronado National Forest, T. 8 S., R. 24 E., and T. 9 S., R. 24 E. (Gila and Salt River Meridian), Graham County, with the following components:

1. *Hawk Peak-Mount Graham Area.* The area above the 10,000-foot (3,048-meter) contour surrounding Hawk Peak and Plain View Peak, plus the area above the 9,800-foot (2,987-meter) contour that is south of lines extending from the highest point of Plain View Peak eastward at 90° (from true north) and southwestward at 225° (from true north).

2. *Heliograph Peak Area.* The area on the north-facing slope of Heliograph Peak that is above the 9,200-foot (2,804-meter) contour surrounding Heliograph Peak and that is between a line extending at 15° (from true north) from a point 160 feet (49 meters) due south of the horizontal control station on Heliograph Peak and a line extending northwestward at 300° (from true north) from that same point.

3. *Webb Peak Area.* The area on the east-facing slope of Webb Peak that is above the 9,700-foot (2,957-meter) contour surrounding Webb Peak and that is east of a line extending due north and south through a point 160 feet (49 meters) due west of the horizontal control station on Webb Peak.

The major constituent element is dense stands of mature spruce-fir forest.



Dated: November 15, 1989.

**Constance Harriman,**

*Assistant Secretary, Fish and Wildlife and  
Parks.*

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